# The Economist's Paradigm

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> "I don't *rejoice* in insects at all," Alice explained, "because I'm rather afraid of them — at least the large kinds. But I can tell you the names of some of them."
>
> "Of course they answer to their names?" the Gnat remarked carelessly. "I never knew them to do it."
>
> "What's the use of their having names," the Gnat said, "if they won't answer to them?"
>
> "No use to *them,*" said Alice; "but it's useful to the people that name them, I suppose. If not, why do things have names at all?"[1]

PEOPLE IN DIFFERENT DISCIPLINES have different perspectives from which they evaluate social conditions and policies aimed at remedying problems. Accordingly, as Alice had to do when she went through the looking glass, a student entering a new discipline frequently is forced to shift to a new analytical framework, to "think differently," and often to draw conclusions about the "state of the world" which are at odds with analyses developed in other disciplines. The contrast among the *modus operandi* of different disciplines is sometimes quite sharp; this may be the case regarding the disciplines of library science and the science of economics. At other times, however, the distinction between disciplinary boundaries is weakened by similarities in *approach* that researchers in different fields take to social issues; this may be true of the distinction between social philosophy or mathematics and economics.

Disciplines are large, amorphous, conceptual superstructures. Nevertheless, they have names because of their widely recognized, distinctive characteristics which largely proscribe the forms their analyses may take

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and the conclusions that may be drawn. Realizing that readers of this issue may have a conceptual framework at variance with that of economics, the purpose of this chapter is to present, in brief survey form, the basic components of what may be called, for want of a better term, the "economist's paradigm." An important but subsidiary purpose is to show how economics has been and is being used to explore social problems far removed from the workings of the marketplace. A discipline like economics cannot be bounded by traditional notions of what constitutes its "proper" topics. Although economics has traditionally dealt with social issues insofar as they relate to private markets, money, unemployment and prices, the "paradigm" of economics also includes research in such diverse fields as crime, bureaucracy, politics, charity and interpersonal relationships.[2] As this author has written elsewhere:

> The unifying factor [in economics] is the approach which economists take toward the study of human behavior. They have a distinguishing set of presuppositions about human behavior — a different image of behavior — leading to a different mode of analysis and to conclusions which complement and, at times, appear to conflict with those of other social scientists investigating the same problem.[3]

In the present paper, major elements of the economist's paradigm will be developed. Basic propositions are stated succinctly in italics and elaborations on those propositions follow.

## ELEMENTS OF THE ECONOMIST'S PARADIGM

*Individuals are assumed to have a consciousness which allows them to do more than merely respond to environmental constraints. Their consciousness enables them to imagine alternative courses of action, to evaluate them subjectively, and to take those actions which they perceive to be in their "best" interests.*

In contrast to the theoretical perspective of other disciplines, economists do not view individual behavior as passive reaction to external forces of the immediate environment and internal forces of genetic structures and physical conditions. The individual is assumed to have wants, desires or preferences, which make his actions "directed from within," purposeful, and in part, capable of affecting the environment. As opposed to the individual *reacting* to the environment, the individual is perceived as operating, within constraints, *on* the environment in such a way

as to achieve to the greatest extent possible those goals which he himself envisions.

Freedom of choice in individual behavior has a strategic place in the economist's paradigm because it not only provides the "elbow room" for actions to be organized effectively (or efficiently, to use an economic term), but it also enables the individual to determine for himself what he wants and how he will go about getting it. Freedom is the substance of subjective evaluation. Subjective evaluation — the determination of specific wants — is of no consequence when freedom of action is denied. Similarly, in a conceptual framework in which all behavior is determined by environmental and genetic forces, freedom of action and responsibility for action have no place. B.F. Skinner, a psychologist who effectively denies that individuals have a "creative consciousness," makes this point with force: "Freedom and dignity illustrate the difficulty. They are the possessions of the autonomous man of traditional theory, and they are essential to practices in which a person is held responsible for his conduct and given credit for his achievements. A scientific analysis shifts both the responsibility and the achievement to the environment."[4]

The economist's view of human behavior leads inevitably to the question of how individual evaluations and actions are coordinated. The economist expends a great deal of intellectual effort explaining the emergence of an "ordered anarchy" (such as a free market), describing the conditions under which individual efforts to achieve goals (or to maximize individually conceived utility) will or will not be tolerably efficient, and assessing the consequences of governmental policies. At this level, the paradigm of the economist is notable for what Friedrich Hayek calls the "pattern of outcome," that is, the semblance of order that is expected. To say more about the specific actions which people will take, more must be known than just that they attempt "to maximize their preferences," or what amounts to the same thing, that they are rational.[5] Something must be known about what people want. However, even with that additional information — which is a great deal — economists have only been successful in indicating the *directional* movements of behavior in response to changes (for example, in prices), and only modestly successful in specifying by how much consumer purchases will increase or decrease under any given set of market changes.

*Exchanges in a free market are mutually beneficial.*

Trade involves the exchange of property rights, and people evaluate the rights they have to resources, goods and services differently. In attempting to maximize the utility of their property, people can be expected

to trade on the basis of these differences in their evaluations. A person who evaluates oranges very highly and apples very lowly can be expected to seek out and trade with someone who has an opposing assessment. By giving up apples, which have a low evaluation, and receiving oranges in return, the person increases his welfare. If people are able rationally and freely to choose whether or not and to what extent they make trades, it follows that, in the absence of deception or fraud, the traders gain by the trades. Otherwise, why do they make exchanges? In this sense, all voluntary exchanges are "profitable" to both traders.

Exchanges of "goods" — more specifically, "rights" or "property rights" — are predicated upon property rights being commonly recognized and legally enforced. The initial distribution of property rights may or may not be "just," and the social conditions necessary for bringing about justice in this regard has recently been a major issue in social philosophy.[6] However, regardless of the justice of the initial distribution, trades which may emerge in a free society improve the welfare of people *from what it would otherwise have been.* The resulting distribution of rights after trade may be construed as "unjust"; however, the economic proof that people are "better off" because of the emergence of trades has some value. The trades also tend to redistribute the rights in the direction of relatively more efficient uses.

*When alternative courses of action are known and subjectively evaluated, every action has a cost.*

Cost is the value placed on the most highly valued alternative forgone when a choice is made. The assumption that people have an almost infinite capacity to envision new wants and goals means that not everything that is wanted can be had. Therefore, the individual, if he is to maximize his welfare or "self-interest" (which can include giving aid to others), must make choices. By definition, when a choice is made, at least one alternative is not realized. The cost of the alternative taken is the value of the most highly valued alternative not taken.

Accordingly, there is a cost to buying a book, but there is also a cost to taking a walk, watching a sunset, or making use of a "free" public library. The cost to a library of a circulated book can be seen rather vividly in its purchase orders for new books or replacements for lost and stolen books, repair bills for old books, and salaries. Many of these costs are absorbed by the general public as taxes, and taxes for library services force the public to forgo other goods and services which they value. Some of the cost of checking out a book must, however, be borne by the user:

he is the one who has given up some other activity, which presumably has value, to be at the library desk. To that person, a library is rightfully "nonfree," and often he decides not to use it simply because the value of his alternative is greater than the perceived value of using the library.

*The amount which people demand of any good is dependent upon the price they have to pay: the higher the price, everything else being equal, the lower the quantity purchased, and vice versa.*

The relationship between prices and quantity can be graphically represented by a downward sloping curve, as in Figure 1. A reduction in price (the vertical axis) will cause a downward movement along the curve, i.e., more will be purchased. This is referred to as the *demand*

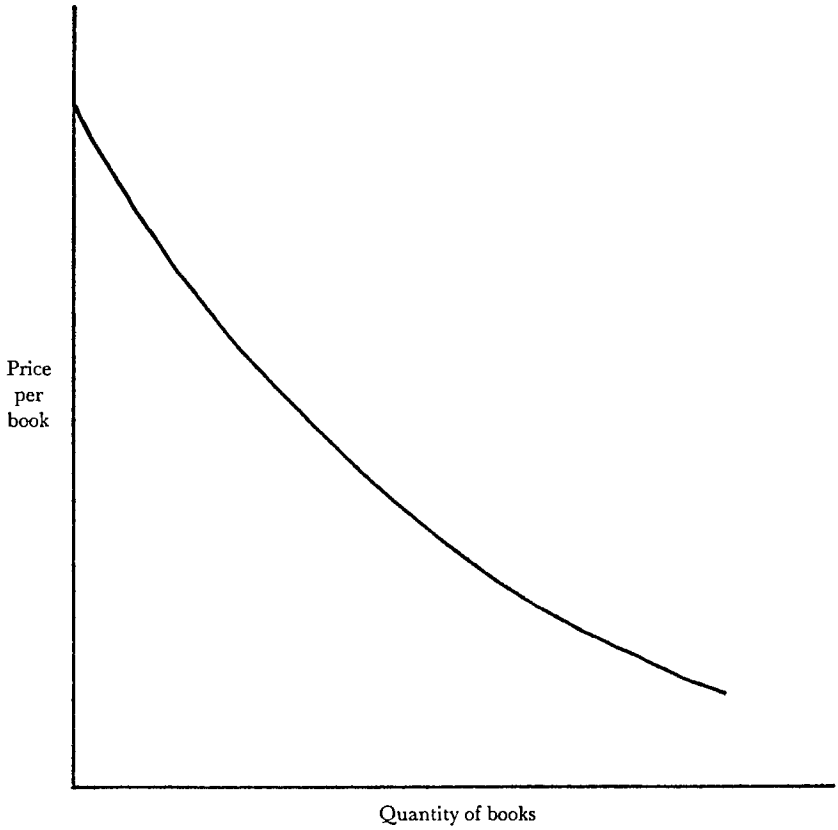


Figure 1. Demand Curve

*curve* because it illustrates the full relationship between the price people are asked to pay for each unit of a good and the amount they will demand (or buy).

The inverse relationship between price and quantity can be explained in two ways. First, a decrease in the price of any good increases the real income of consumers of that good and *enables* them to buy more, which they tend to do when they do not have all they want. Second, a price reduction *induces* consumers to buy more of that item in lieu of other items which probably were purchased before the price reduction. The explanation for this "substitution effect" is based on the assumption that people attempt to "maximize their welfare." The rational, maximizing person will allocate his income until the last cent spent on one good yields the same satisfaction as the last cent spent on other goods.[7] Given this "consumer equilibrium condition," any price reduction will upset the balance that has been achieved. If the price of a book, for example, is reduced, the consumer will initially get more satisfaction from a dollar spent on that book than he can get from a dollar spent on another good whose price has not fallen. The consumer will then increase his purchases of books, reducing purchases of other goods.

Regardless of how the concept is explained, the inverse relationship between price and quantity has been so firmly fixed and repeatedly verified by empirical analysis that it is known as a "law" — the *law of demand.*

Again using the library as an example, the law of demand predicts that increasing the book rental fee from zero (the price in most public libraries) to some positive level will cause a reduction in the number of books borrowed. Similarly, an increase in the fines levied against overdue books will cause a reduction in the number of times books are kept overdue, because the greater fines increase the "price" of keeping books out on a daily basis. Furthermore, the law of demand predicts that an increase in the expected penalty imposed on people caught stealing books will lead to a reduction in books stolen; again, the greater penalty increases the expected price of "using" library books and causes a downward adjustment in the number of books library patrons will want to use through theft.[8]

*Within the relevant range of most production processes, the additional (or marginal) cost of additional units of a good produced will expand as the output level expands.*

An important, observed technological law — the *law of diminishing returns* — states that as successive units of one resource, such as labor,

are added to a fixed quantity of another resource, such as a physical plant, there is a point beyond which additional units of labor will result in progressively smaller increments in total output. In other words, the returns to additional labor will diminish.[9] It stands to reason that if additional labor, which presumably is paid a constant wage, contributes progressively less to output, additional units of output must cost progressively more. This means that beyond some point in the production process, the marginal cost of additional units of output must rise.

The law of diminishing returns does not state that the additional cost of all units of output must rise from the very start, but rather that beyond a certain point, the marginal cost of additional units rises and will continue to rise as production expands. However, this theory concludes that in competitive markets, firms will produce within the range of rising marginal cost.[10] If they are not within that range, long-term reductions will be made in the quantity of the fixed factor of production, which in this discussion is a physical plant. In order to induce private (unsubsidized) firms to expand production, the price of the good must rise so that producers can cover the higher marginal cost of the greater output. Alternately, an increase in the price means that firms can more than cover the (marginal) cost of additional units and can, therefore, be expected to expand output. The direct relationship between price and quantity can be graphically described as an upward sloping curve, appropriately called the *supply curve* (see Figure 2).

*Through subjective evaluation of alternatives, a rational person will extend his consumption of a good, such as books read, until the marginal benefit of the last unit is equal to its marginal cost.*

Marginal benefit is the value of an additional unit of good consumed; marginal cost is the value of the rejected alternative. If the marginal benefit of a unit of good consumed is greater than its marginal cost, then it stands to reason that the person gains by the consumption. Even though, as additional units are consumed, the marginal benefit declines and the marginal cost increases, the maximizing person will continue to consume as long as the marginal benefit is greater than the marginal cost. A rational person will not extend his consumption beyond this point; a person will not knowingly consume a unit from which he receives less value than he loses from rejecting some other, more highly valued alternative. Consequently, a person will extend his consumption of the good up to, but not beyond, the point that the marginal benefit equals the marginal cost.[11]

It can be concluded that as long as alternatives are subjectively evaluated, there is a self-imposed limit on behavior, which very often restricts

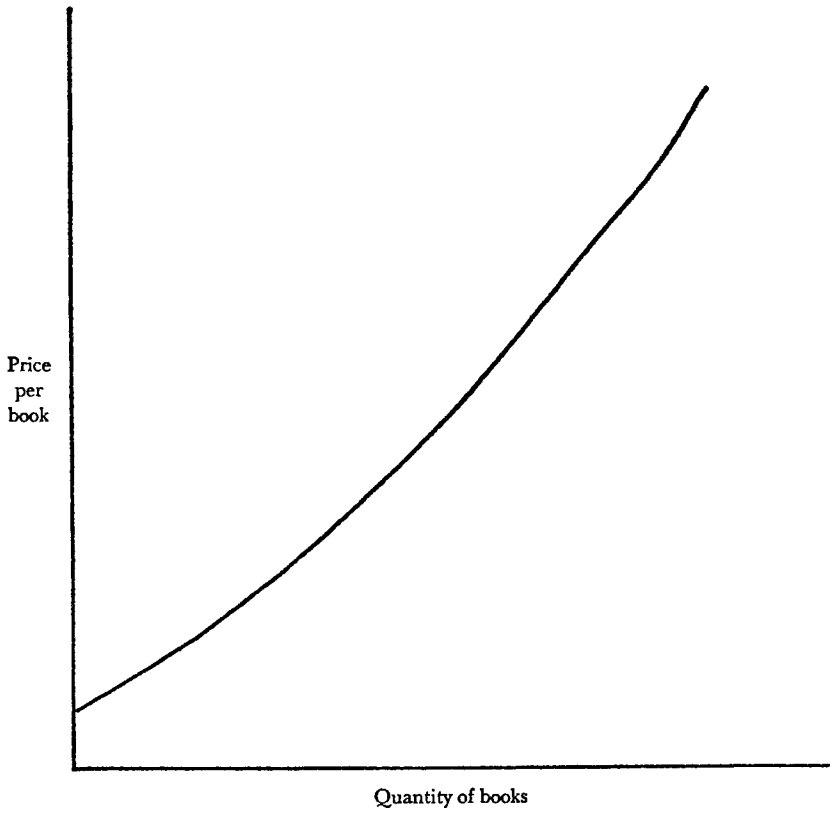


Figure 2. Supply Curve

it to some point below one's physical and technological capabilities. For example, if a person is physically and intellectually capable of making extensive use of a university library, he or she may do extraordinarily well academically. However, a student may choose to restrict his studying to a point well below his capabilities simply because of the perceived costs and benefits of the activity. Beyond some point, the additional cost (that is, value of a forgone alternative) may be greater than the additional benefits anticipated in terms, for example, of a higher grade. In short, libraries may be empty on weekends because hours spent in the library then are simply not worth the costs, as subjectively evaluated by students and faculty; they have better things to do!

*There is a tendency for individuals within very large groups to fail to pursue "common goals" even when the goals are agreed upon by all group members. Therefore, voluntary collective action is not likely in very large groups.*

In a large group, the actions of any individual are relatively insignificant. It is difficult for a person to perceive the impact of his own efforts and to realize the benefits from the costs he incurs. As a consequence, he has little or no incentive to do anything toward the accomplishment of collectively acknowledged goals, and may become a "free rider," one who waits for others to take action and incur the necessary costs involved in achieving collective goals. If everyone attempts to become a free rider, then nothing will be done: voluntary action will fail to achieve what everyone wants.[12]

For example, an individual's tax payments are typically a minute part of the total taxes collected by the federal government. Consequently, an individual may correctly reason that his taxes, by themselves, will have no effect on the quantity or quality of public goods and services rendered by the government. He further understands that a total withdrawal of his tax payments will not reduce the public goods and services produced and the subsequent benefits he receives. As a result, each individual, although he may be in total agreement with what the government aspires to do, has no incentive to submit *voluntarily* his tax payment. In order to get everyone to pay their taxes, the government must threaten each potential taxpayer with a penalty for failure to pay. The penalty in this case provides the individual with the private incentive he needs to pay the taxes as proscribed by Internal Revenue Service rules.

Furthermore, individual competitors, like farmers, collectively have an incentive to restrict their individual output, thus materially reducing the market supply and increasing the price received for their crops. Collectively, farmers will then be better off. However, each farmer may reason that any restriction on his output will not affect the market price, *dependent on what the others do.* He, therefore, has no incentive to participate in a voluntary, collective action designed to improve the total income position of all farmers; indeed, he has a positive incentive to violate any collective agreement on voluntary crop restrictions.

Similarly, it may be in the interest of all students to read and learn as much as possible while in college; if all students study harder, the reputation of the school for quality graduates can be enhanced and all students may improve their economic positions by receiving better job offers. However, the efforts of each student individually will have little

impact on the overall reputation of the school; hence, the common interest of all students will have little or no effect on the behavior of individual students. All will tend to do what is in their private interest, narrowly defined.

*To the extent that competition exists, a market will be efficient.*

When combined on one graph, as in Figure 3, supply and demand curves form a model of market behavior. Under competitive conditions, the market price and quantity sold will move toward $P_1$ and $Q_1$, the intersection of the two curves. The reason for the intersection of price and quantity is straightforward: if the price is above $P_1$, producers want to sell more than consumers want to buy. Producers will "compete" the price downward as they attempt to find buyers for all that they want to sell.

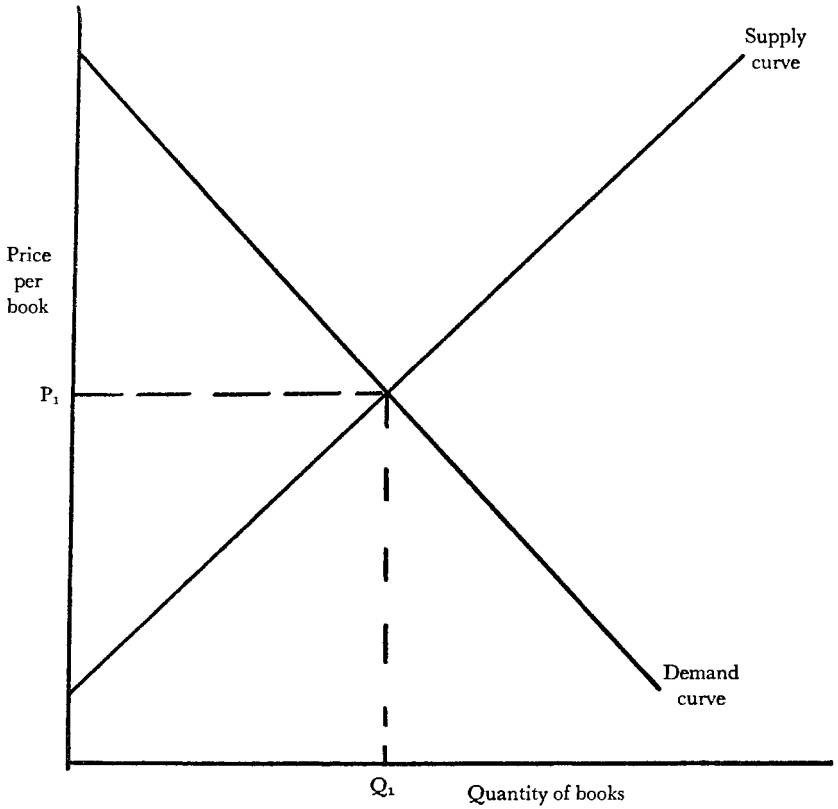


Figure 3. Competitive Conditions

As the price falls, consumers expand their purchases and producers reduce their output levels. At a price of $P_1$, the market clears and there is no reason for producers to cut the price further. If the price is below $P_1$, it means that consumers want to buy more than sellers want to produce. The consumers will "compete" the price upward as they attempt to get what they want. As the price rises, consumers want less and at the same time, the quantity which producers offer increases until the market clears.

Competitive markets are "efficient," in the sense that economists use the term, in two respects.[13] First, given subjective preferences and production costs, competition maximizes output (see Figure 4). The supply curve represents the *minimum* price at which producers are willing to sell each quantity of books. They would gladly, however, accept prices above these minimums. Consequently, the price/quantity combinations acceptable to producers lie either on or above the supply curve, in the shaded area of Figure 4A. Producers are not willing to go below that curve into the non-shaded area of the graph, as the price then would not cover the cost of production.

On the consumer's side of the market, the demand curve indicates the *maximum* prices consumers are willing to pay for each quantity of books. They are, of course, willing to pay less. The price/quantity combinations acceptable to consumers, therefore, lie either on or below the demand curve, or in the shaded portion of Figure 4B.

Combining Figures 4A and 4B illustrates the price/quantity combinations acceptable to both consumers and producers (the crosshatched area in Figure 4C). Combinations outside that area are either inconsistent with the preferences of consumers, the willingness of producers to produce, or both. The quantity actually produced in the highly competitive market is $Q_1$. It appears at the extreme right of the crosshatched area, indicating the maximum production quantity acceptable to the combination of consumers and producers. This illustrates the reason economists argue that the competitive market *maximizes* output. It does not mean that more of the good cannot be produced; however, consumers are unwilling to cover the full cost of producing the additional units. To output quantities beyond $Q_1$ requires that producers be coerced into further production, or that consumer purchases be subsidized.

$Q_1$ is also an efficient level of production for another reason. At any point to the left of $Q_1$ the supply and demand curves indicate that consumers value an additional book at more than what it costs. The price, which is an indication of relative value, is greater than the marginal cost, which is an indication of the value of those things which are forgone.

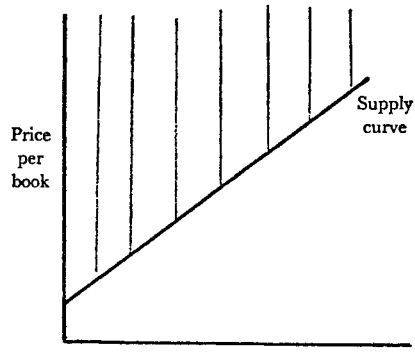


Figure 4A.

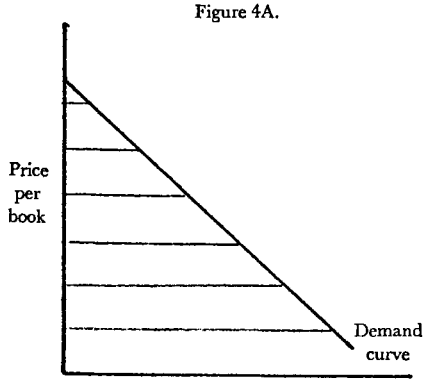


Figure 4B.

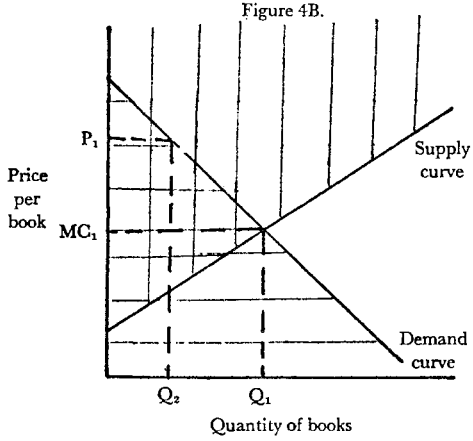


Figure 4C.

Look, for example, at $Q_2$. Someone is willing to pay as much as $P_1$ for that unit, while the marginal cost is actually much lower ($MC_1$). The utilization of the resources in the production of that book raises the welfare of consumers: they receive more pleasure out of the additional book than they could have received from some other good that could have been produced. Furthermore, consumers of books can more than compensate the owners of the production resources for any loss they may have suffered by not using the resources in some other way: they can pay the producers a price in excess of $MC_1$.

The consumers are better off with the $Q_2$ book, or they would not have been willing to pay the price. The producers are also better off, or they would not have been willing to employ their resources in the production of that book. In the view of economists, this is a desirable outcome. This will follow with all other units of books up to $Q_1$ — the production level toward which competition will tend to push the market.

"Profit maximization" is the motivation which pushes the competitive market toward the intersection of the supply and demand curves. Therefore, profit maximization is not generally seen by economists as undesirable. Indeed, to the extent that it makes firms produce efficiently, profit maximization has socially desirable consequences. The individual producer, interested in maximizing his own profits, is induced to reveal to consumers the lowest price he is willing to charge. If the price is too high to attract consumers, the individual producer can increase his market share and profits by reducing his price below the level charged by others. If he does not reduce his price, other producers will and his customers will thus be attracted to other profit-maximizing firms.

A competitive system of profit-maximizing firms also tends to provide consumers with the types of goods and services they want. A firm which wants to expand its profits can do so by providing goods which consumers want more than those already available on the market. The consumer should be willing to pay a higher price for these goods, which is the inducement profit-maximizing firms need to enter the market. If there are no barriers to entry in a market, then higher prices on newly introduced goods will entice other firms into the market, and the price of the new products will tend to fall to competitive levels.

Profit maximization and competition provide consumers with a degree of protection from producers who are unconcerned about consumer welfare. Such a producer may reason that he can cut his costs and raise his profits by providing products which are "shoddy" or which quickly become obsolete. However, if consumers actually want better-quality or

more enduring products than those provided and are actually willing to pay for them, then new firms will enter the market, provide products of the quality desired and force the existing producer either to leave the market or to produce what consumers want and are willing to pay for. Granted, competitive markets will not fully protect consumers from the perils of daily existence; that is an impossibility. In addition, consumers will not always buy perfectly reliable or safe products simply because they cost too much, and consumers prefer to spend their money on other things.

*Monopoly firms will tend to restrict output and increase the price of the products they sell.*

A pure monopoly is a sole seller of a product. Accordingly, the pure monopolist does not have to worry about being outmaneuvered or undersold by close competitors. It can, therefore, restrict its production and ask a higher price for its product without fear that some other firm expanding production will take over its market. There is no producer which can force or induce the monopolist to charge a competitive price.

Although the monopolistic firm is constrained by the market demand for its product and the costs of production, it can demand any price/quantity combination along the demand curve; generally, the monopoly price will be higher and the quantity lower than exist under competitive market conditions.[14] The necessary condition for the long-term survival of a monopolist is the presence of barriers to entry into the market; without barriers, firms interested in maximizing their profits will be attracted into the market by the profits that the high monopoly price spells. The barriers to entry may be technological, which is the case when a production process cannot be duplicated; or man-made, which occurs when the government grants exclusive franchises to bus companies or airlines to operate along certain routes, for example.

Private firms can be expected to take full advantage of any monopoly position they attain. Similarly, government bureaus interested in expanding their power, budgets and employee benefits can be expected to make full use of their monopoly positions in the supply of public goods and services. The monopolist nature of many bureaus is not fully recognized, but it can nonetheless be felt in terms of higher taxes (prices) and reduced quantity and quality of goods and services provided for public use. Therefore, the elimination of "duplication" of services by government bureaus or units will not necessarily be beneficial, as it can create a bureaucratic monopoly which can use its "market position" to reduce output and raise its tax-price.

The same is true of libraries. To have several independent libraries in a metropolitan area, for example, may be desirable. In some strict technological sense, there may be duplication of services; however, the cost of library service to the public may be lower in such an environment because the libraries are forced to compete in terms of their services for funding, which normally comes from local or state government. The library which offers quality service at the lowest price will have that many additional funds for expansion and increasing employee salaries and fringe benefits. Without such competition among libraries, it may be impossible for funding agencies to know the true cost of library services. It is librarians, not politicians who are far removed from the daily operations of libraries, who are in the best position to know the technology of library services and the *minimum* prices that must be paid for labor, equipment and supplies. However, it may not be possible to utilize the available technology fully or to secure the minimum funding (e.g., for labor) unless libraries are forced to compete, that is, to attempt to outdo one another in order to survive and advance the welfare of librarians.

*To the extent that costs are imposed on or benefits are received by persons not directly involved in market transactions, the market is not efficient.*

When a producer imposes costs — in the form of smoke pollution, for example — on someone who is not a buyer and who is not compensated for the harm done, the perceived costs of production to the producers will be lower than they actually are. The producer will be willing to offer his products at a lower price and will be able to sell more than otherwise. There will be "overproduction" because of what are called "external costs" — in this case, pollution.[15]

On the other hand, sometimes people outside the market transactions benefit from exchanges that are made. This is often the case in town beautification projects. When people do not have to pay for the benefits they receive, producers will not be compensated for the full value of their products. As a result, they will be unable to charge as high a price as otherwise and, consequently, will produce less. These "external benefits" lead to "underproduction" in a free market. In the case of town beautification, merchants unable to charge passersby for the improved appearance of their stores will be less inclined to make such improvements.

The inefficiencies of external costs and benefits can be corrected by two forms of government action. The first is enforcing a set of standards of performance for consumers and producers. Examples of such standards placed on producers are pollution control laws and building codes which

regulate the size, shape and color of storefronts. Second, inefficiencies can be corrected through taxes and subsidies. A tax on polluters can cause the price of a product to rise and the quantity sold to fall, thus eliminating "overproduction." Alternately, a subsidy can be given to store owners which lowers the net cost of beautification and, therefore, the prices store owners must charge to cover the cost. This, in turn, can eliminate "underproduction."

## ECONOMIC PRINCIPLES AND QUESTIONS IN POLITICAL ECONOMY

The elements of the economist's paradigm have been used to explore many diverse social issues. The following questions and answers illustrate this range of issues within one subject area: that of education.

*How should a library allocate its limited number of book lockers and study carrels?*

A limited supply of lockers and carrels can be distributed in a variety of ways: first come, first served; lottery; class status; or the personal preferences of the allocators. One allocation mechanism often overlooked by libraries is the pricing system. A price charged for the use of a locker can be raised until the available number of lockers exactly matches the number of lockers demanded. That such a match will occur is the law of demand. As the price is raised the number of lockers demanded will fall for two reasons: (1) the price increase will force people with insufficient income out of the market, and (2) it will induce some people to substitute other goods and services, which they consider relatively more valuable, for library lockers. At some point, this decreasing demand will exactly equal the number of lockers available.

This pricing system is not a perfect allocation mechanism; it discriminates against people with limited income. On the other hand, it has much to recommend it. First, it allows people to express the relative intensity of their preferences: those who want the lockers most, and are willing to pay for them, can effectively bid for them. Those people with low income, who want to raise their earning power through education, may have a higher demand for lockers than people with higher incomes. Second, the pricing system eliminates the need for what are often rather arbitrary rules for such allocation. Third, the charges collected for the use of lockers can induce the library to increase the number of lockers it has, or these funds can be used to subsidize other library functions which the staff considers more important. Similarly, market shortages of such diverse

commodities as natural gas, water and even "rights to pollute" can be effectively eliminated by appropriate upward adjustments in their prices.

*Should school districts be consolidated?*

An argument frequently heard in educational circles is that cost savings (economies of scale) result when the geographical area covered by a school system is expanded. Supposedly, consolidation of school systems eliminates duplication of administrative offices and enables them to offer a greater variety of programs. There may actually be economies of scale in education, but studies show that consolidation leads to higher costs per student.[16] One possible explanation for this is that there actually are "diseconomies of scale" in school system expansion and that educators who propose consolidation are unaware of them. Another explanation, drawn from economic analysis, is that the consolidation of school systems gives educational authorities monopoly power; the consequence is higher tax-prices and expenditures and lower quantities of educational services provided. Armed with monopoly market power, it cannot be presumed that public employees will act any differently than private employees.

## SUMMARY AND CONCLUSIONS

The preceding discussion has been a necessarily terse description of the theoretical basics of economic analysis. Although much has been left unsaid, even this brief description of the economist's paradigm suggests the course which much analysis within the discipline tends to take; it also suggests the likely dimensions and form of the analysis which will follow. I have related basic components of economic analysis to education, not so much because it may be a subject of interest to most readers, but because it emphasizes an important purpose of this issue of *Library Trends:* to demonstrate that economics can be usefully applied to bureaucratic as well as to private institutions.

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4. Skinner, B.F. *Beyond Freedom and Dignity.* New York, Alfred A. Knopf, 1971, p. 25.

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6. Rawls, John. *A Theory of Justice.* Cambridge, Mass., Harvard University Press, 1971; and Nozick, Robert. *Anarchy, State and Utopia.* New York, Basic Books, 1974.

7. McKenzie and Tullock, *Modern Political Economy,* op. cit.

8. An implicit assumption in this analysis is that the probability of capture and punishment is not affected by the increase in the penalty levied against those caught in library thefts. An increase in the probability of capture can have the same impact on theft as an increase in the penalty. For an extended discussion of the economics of crime, *see* McKenzie and Tullock, *The New World of Economics,* op. cit., pp. 129-80.

9. ———, *Modern Political Economy,* op. cit., pp. 53-74.

10. Leftwich, Richard H. *The Price System & Resource Allocation.* 5th ed. Hinsdale, Ill., Dryden Press, 1973, pp. 199-226.

11. McKenzie and Tullock, *Modern Political Economy,* op. cit., pp. 53-74.

12. Ibid., pp. 92-107. *See also* Olson, Mancur. *The Logic of Collective Action: Public Goods and the Theory of Groups.* Cambridge, Mass., Harvard University Press, 1965, pp. 5-110.

13. McKenzie and Tullock, *Modern Political Economy,* op. cit., pp. 109-33.

14. Ibid., pp. 164-85.

15. Ibid., pp. 227-41, 340-57.

16. Staaf, Robert J. "The Public School System in Transition: Consolidation and Parental Choice," and "The Growth of the Educational Bureaucracy: Do Teachers Make a Difference?" *In* Thomas E. Borcherding, ed. *Budgets and Bureaucrats: The Sources of Government Growth.* Durham, N.C., Duke University Press, 1977, pp. 130-47, 148-68. The two papers by Staaf include citations to a variety of studies which make the central point that the more consolidated the school system, the greater the per student cost.